

Amendments to the Drawings:

Enclosed herewith are replacement sheets with new versions of Figures 1 and 4-7. These replacement sheets are the same as the prior replacement sheets, except that the captions are written in English.

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

I. Amendments to the Figures and Claims

Figures 1 and 4-7 are being amended to recite the captions in English. No other changes are being made. Thus, no new matter is being added.

Claims 12-17 are requested to be cancelled without prejudice or disclaimer. In addition, claims 18-26 are being added. Support for these new claims can be found throughout the specification as-filed. Exemplary support for these new claims is provided in the table below.

<u>Claim</u>	<u>Exemplary Support¹</u>
18	Original claims 7 and 11; page 4, 1 st full paragraph.
19	Original claim 8; page 2, last paragraph.
20	Original claim 5; page 3, 3 rd full paragraph.
21	Original claim 10; page 4, 1 st full paragraph.
22	Original claims 1 and 2.
23	Original claims 7 and 11; page 4, 1 st full paragraph.
24	Original claim 8; page 2, last paragraph.
25	Original claim 5; page 3, 3 rd full paragraph.
26	Original claim 10; page 4, 1 st full paragraph.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s)

¹ Citation to the specification in this table and throughout the response is made with reference to the originally filed specification.

remain under examination in the application, is presented, with an appropriately defined status identifier.

It is acknowledged that the foregoing amendments are submitted after final rejection of the claims. However, because the amendments do not introduce new matter and either place the application in condition for allowance or at least in better condition for appeal, entry thereof is respectfully requested. After amending the claims as set forth above, claims 18-26 are pending.

II. Drawings

A. Allegedly Missing Features

The Office Action objects to the drawings because they allegedly “do not depict the current claimed invention.” Office Action at 2. According to the Office Action, the drawings fail to depict the following features: (1) explain the inhibition of the metameretic effects; (2) the most important gamma colors; and (3) frequency modulated screen. *Id.* Similarly, the Office Action objects to the drawings under 37 C.F.R. § 1.83(a) for allegedly failing to show features (1)-(3), as listed above. Office Action at 3. The Office Action requires amended drawing sheets. Applicants respectfully traverse these grounds for objection.

New drawing sheets are not needed because the current drawings adequately describe the invention, as present claimed. Specifically, the new claims do not recite “inhibition of metameretic effects” or “the most important gamma colors.” In addition, the drawings do not need to depict “frequency modulated screen” because the current figures depict the presently claimed invention. Indeed, the figures depict a target as presently claimed. *See* Figs. 4-7. Moreover, frequency modulated screening is a process well-known to the skilled artisan. Thus, no amendments to the drawings are necessary in order to depict the claimed invention and comply with 37 C.F.R. § 1.83(a).

B. Captions

“The drawings are objected to for failure to provide legends written in English.”
Office Action at 4.

Applicants enclose amended drawings, which have English-language legends. Accordingly, Applicants respectfully request reconsideration and withdrawal of this ground of objection.

III. Claim Rejections – 35 U.S.C. § 112, First Paragraph

A. Best Mode

Claims 12-17 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the best mode requirement. According to the Office Action, “[e]vidence of concealment of the best mode is based upon the failure to explain in the written specification or provide a drawing for how to avoid the ‘unexpected metameretic effects.’” Office Action at 4. Applicants respectfully traverse this ground of rejection.

The specification fully complies with the best mode requirement. Compliance with the best mode requirement must be assessed based on the claimed invention. MPEP 2165.01(I). “The examiner should assume that the best mode is disclosed in the application, unless evidence is presented that is inconsistent with that assumption.” MPEP § 2165.03. Indeed, “[i]t is extremely rare that a best mode rejection properly would be made in *ex parte* prosecution.” *Id.* Here, the claims no longer recite “unexpected metameretic effects.” In addition, there is no evidence that Applicants have concealed the best mode. In fact, the specification contains a detailed description of how to make the claimed target. *See Spec.* at pages 5-6. Accordingly, the specification complies with the best mode requirement for the claimed invention.

B. Enablement

Claims 16 and 17 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. According to the Office Action “there is no mention in the written specification of a teaching as to how the frequency modulated screening would be performed.” Office Action at 5. Applicants respectfully traverse this ground of rejection.

The specification complies with the enablement requirement because the specification contains a description of the claimed invention sufficient to allow a skilled artisan to practice the invention without undue experimentation. “Detailed procedures for making and using the invention may not be necessary if the description of the invention itself is sufficient to permit those skilled in the art to make and use the invention.” MPEP § 2164. Here, the specification does not need a detailed description of “frequency-modulated screening” because a skilled artisan is familiar with “frequency-modulated screening.” Given the knowledge in the art of “frequency-modulated screening” and the description in the specification, one of skill in the art can perform frequency-modulated screening to make the claimed invention without undue experimentation. Indeed, the specification contains a detailed description of how to make the claimed invention. *See Spec.* at pages 5-6. Accordingly, the claims are enabled.

IV. Claim Rejections – 35 U.S.C. § 112, Second Paragraph

Claims 12-17 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly “failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” Office Action at 4. Specifically, the Office Action states that the following terms are indefinite: (a) “metameric effects;” (b) “the most important gamut colors;” and (c) “the gamut.” Applicants respectfully traverse this ground for rejection.

While not acquiescing in the propriety of the rejection, Applicants have amended the claims so that they no longer recite the language deemed objectionable. Accordingly, the amendment renders the rejection moot. Thus, Applicants respectfully request reconsideration and withdrawal of this ground of rejection.

V. Claim Rejections – 35 U.S.C. § 103(a)

Claims 12-14 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 5,271,096 to Cook. According to the Office Action, “Cook teaches a target for calibration of digital input devices comprising a plurality of fields with plural colors which could serve as bases (i.e., CMYK) whereby if the colors are smoothed between the edges they could reduced metameric effects as defined by some technical dictionaries.” Office Action at 6. Applicants respectfully traverse this ground of rejection.

A. Introduction

With conventional screening (also known as amplitude modulated or autotypic screening), the individual printed dots are of varying sizes and each dot is placed with its middle point equidistant from that of its neighbors. In contrast, with frequency modulated screening all printed dots are the same size. Rather than changing the size of the dots, frequency modulated screening relies on the number of dots per unit area. Dot distribution follows the principle of mathematical randomness. The size of the dots is considerably smaller in frequency modulated screening than in conventional screening. In fact, many small dots frequency modulated dots would equal the size of one conventional dot on a given area.

The significant advantage of frequency modulated screening lies in the fact that it produces a printed quality with excellent detail sharpness, similar to analog silver halide photography, where silver atoms are also randomly distributed within the film. This is a result of the substantially higher resolution and the random distribution of the dots, which avoids the step effect edges in graphic elements.

It is critical for the possibility of using printed targets for the calibration of digital input devices that targets printed by means of frequency modulated screening do not exhibit line structures or screen angling, which would lead to unwanted Moiré patterns when being read by digital input devices like scanners or digital cameras. The Moiré effect would lead to color changes, which would render correct calibration impossible. For the same reason, frequency modulated screening prevents the occurrence of “rosette” structures.

Despite the potential advantages of frequency modulated screening, the art did not recognize that frequency modulated screening could be used to produce high quality calibration targets. Indeed, skilled artisans did not employ such techniques because they believed that Moiré effects and metamerism would make the targets unsuitable for use. In addition, it is very difficult to achieve exact colors with frequency modulated screening, which is critical to produce targets. The industry prejudice against targets made by frequency modulated screening is evinced by the fact that calibration targets of the well known company Gretag-Macbeth are still produced by preparing the colors individually for every color field and applying the colors over the whole area of carton patches, which are then assembled to a calibration target.

Contrary to the wisdom in the art, Applicants surprisingly discovered that targets, as claimed, could be produced using frequency modulated screening. These targets offer improved accuracy at a reduced cost. *See Spec.* at pages 2-3. Thus, the targets of the present invention offer a significant advantage over the prior art.

B. Cook Fails To Teach Or Suggest A Target Made “By Means Of Frequency Modulated Screening”

Cook does not render the claimed invention obvious because Cook does not teach production of a target using frequency modulated screening. Indeed, the techniques available at the time of Cook were based on photographically exposed picture prints, *i.e.*, on additive processes. In other words, frequency modulated screening was not available to Cook. *See U.S. Patent No. 6,406, 833 to Nouel col. 3, ll. 21-23 (Exhibit A).* On the other hand, the present claims require “frequency modulated screening.” Thus, Cook fails to teach or suggest the claimed invention.

Moreover, Cook would not suggest to one of skill in the art production of a target using “frequency modulated screening.” Indeed, the art suggested that frequency modulated was not suitable for forming targets because “an irregular reproduction in the scale of the shade values” and “faithful reproduction with so small screen dots is therefore almost impossible.” *See U.S. Patent No. 6,406, 833 to Nouel col. 3, ll. 53-54, 59.* Accordingly,

“frequency-modulated screens ... are available for printing, but their use remains extremely limited.” *Id.* at col. 4, lines 4-6. Given these known limitations of frequency modulated screening, one of skill in the art would have no motivation to substitute the additive process of Cook with the subtractive process, as claimed.

For at least these reasons, Applicants respectfully request reconsideration and withdrawal of this ground of rejection.

VI. Claim Rejection – 35 U.S.C. § 103

Claims 15-17 stand rejected under 35 U.S.C. § 103(a) as allegedly obvious over Cook in view of U.S. Patent No. 5,416,613 to Rolleston *et al.* Cook is cited for teaching “a target calibration comprised of colors of fields having different colors in different places,” and Rolleston is cited for teaching “repetition of the same colors on different places of the target, following a defined pattern.” Office Action at 7. According to the Office Action,

Since Cook and Rolleston show targets, the purpose of using a target that has identical colors in difference spaces on the target verses one that does not, would have been obvious in view of Cook. It would have been obvious to one of ordinary skill in the art to replace target sheet 110 of Cook with printer target 200 as provided by Rolleston for the purpose of formulating a target sheet that provides a plurality of the same colors in different spaces.

Office Action at 7. Applicants respectfully traverse this ground of rejection.

Cook and Rolleston fail to teach or suggest a target for calibration of digital input devices made using frequency modulated screening. As noted above, Cook fails to suggest the use of frequency modulated screening. Indeed, frequency modulated screening was not available at the time of Cook, and even after the technique became available, the art discouraged a skilled artisan from employing it to make targets for calibration of digital input devices. *See* Nouel (Ex.A).

Rolleston does not remedy this deficiency. Indeed, Rolleston does not employ a frequency modulated printing process. Instead, the “pseudo random” distribution refers to the distribution of color fields over the target area rather than the distribution of dots. *See*

Rolleston col. 3, ll. 33-50 (“[T]he pattern appears to be random or at least uncorrelated from patch to patch. Randomness also aids in assuring that printer non-uniformities do not affect, for example, all the colors located in one region of color space.”). Moreover, the art teaches away from the use of frequency modulated screening, as discussed above. Thus, Rolleston does not teach or suggest the claimed invention.

Additionally, Rolleston is concerned with “printer non-uniformities” (col. 6, line 33 – col. 7, line 10). Thus, the printed patches may vary in color. In contrast, the targets of the present invention can be used for the adjustment of deviations in illumination (page 3, last paragraph). In order to adjust for such deviations, the color cannot vary. Accordingly, Rolleston teaches away from the claimed invention.

For at least these reasons, Applicants respectfully request reconsideration and withdrawal of this ground of rejection.

CONCLUSION

The present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By Michele M. Simkin

FOLEY & LARDNER LLP
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5143
Telephone: (202) 672-5538
Facsimile: (202) 672-5399

Michele M. Simkin
Attorney for Applicants
Registration No. 34,717